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Australia's

LIVESTOCK

and MEAT INDUSTRY

...and the U. S. Producer

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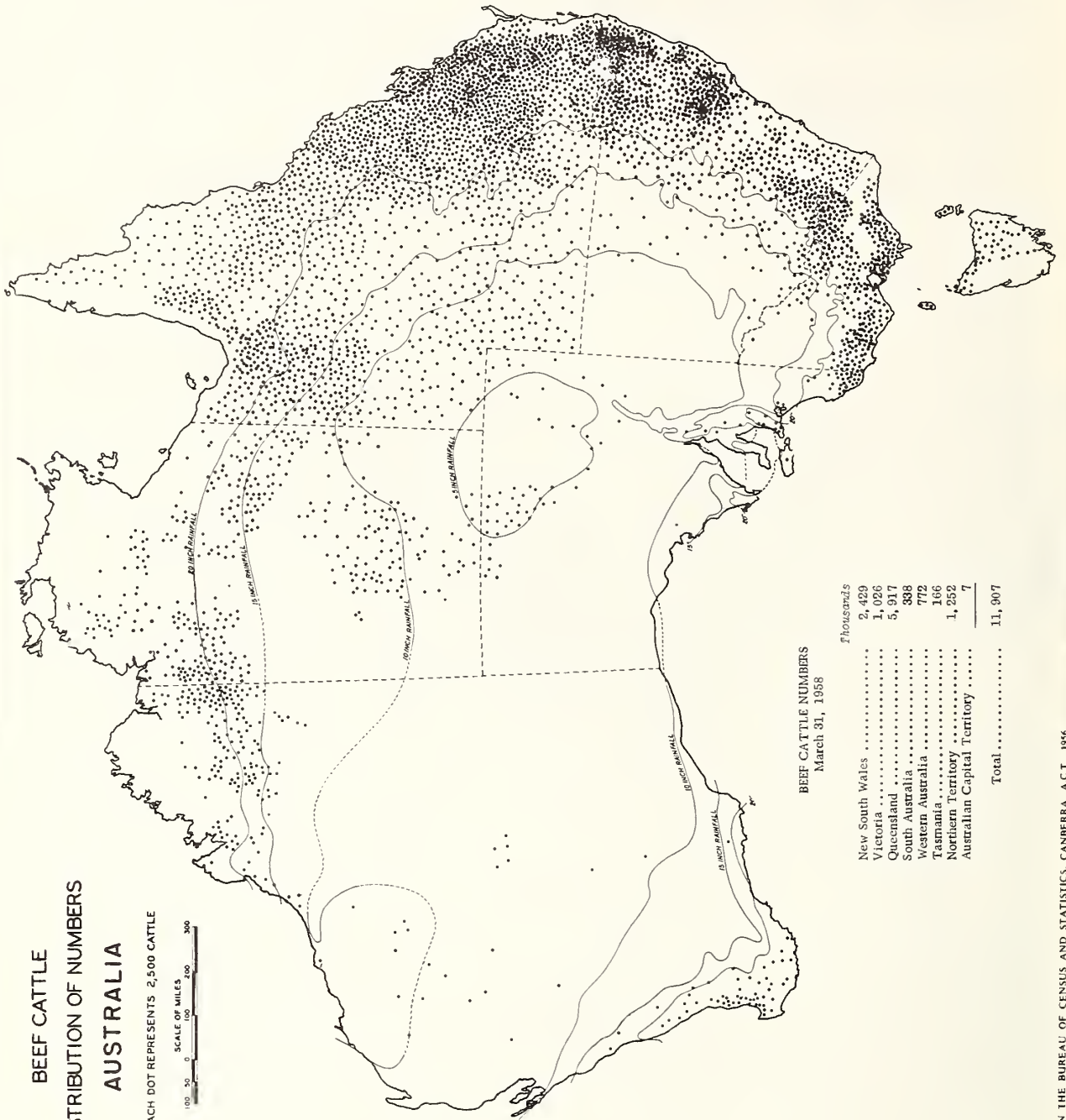
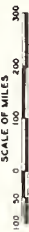
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(U.S.) Foreign Agricultural Service
U. S. Department of Agriculture

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October 1959

BEEF CATTLE DISTRIBUTION OF NUMBERS AUSTRALIA

EACH DOT REPRESENTS 2,500 CATTLE

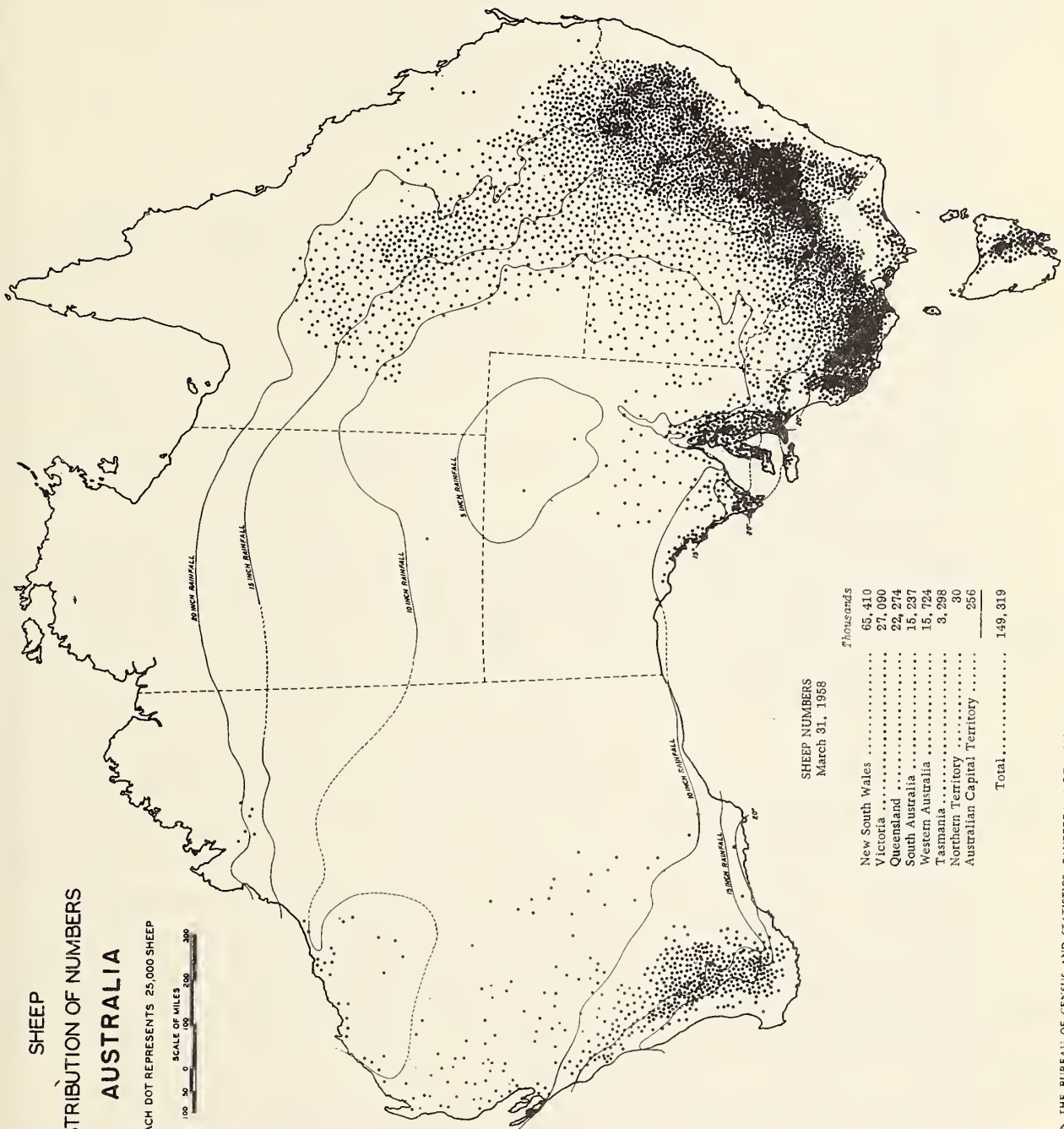


BEEF CATTLE NUMBERS
March 31, 1958

	Thousands
New South Wales	2,429
Victoria	1,026
Queensland	5,917
South Australia	388
Western Australia	772
Tasmania	166
Northern Territory	1,252
Australian Capital Territory	7
Total	11,907

SHEEP DISTRIBUTION OF NUMBERS AUSTRALIA

EACH DOT REPRESENTS 25,000 SHEEP



SHEEP NUMBERS
March 31, 1958

	<i>Thousands</i>
New South Wales	65,410
Victoria	27,090
Queensland	22,274
South Australia	15,237
Western Australia	15,724
Tasmania	3,298
Northern Territory	80
Australian Capital Territory	256
Total	149,319

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AUSTRALIA'S LIVESTOCK AND MEAT INDUSTRY and the U.S. producer

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SUMMARY

Australia's large land area is well suited to livestock production. It has 150 million head of sheep--nearly 5 times the United States' total; it has 17 million cattle, compared with 97 million in the United States.

In sheep farming, emphasis is on wool production; nearly 30 percent of the Australian sheep are wethers. Although lamb crops are low, mutton and lamb production reached a high of 920 million pounds in 1958, compared with 688 million pounds in the United States.

Australian beef production has been increasing sharply. Output in 1958 reached 1.7 billion pounds. A record production is expected in 1959. Productivity per cow has increased significantly in the past 20 years.

Livestock numbers have increased one-third since the beginning of World War II, and a further increase is likely, particularly if meat and wool prices continue relatively high. Pastoral production is greatly affected by drought, but producers are becoming less vulnerable to fluctuations in rainfall through pasture improvement, production of supplemental feed supplies, reclamation of new land--particularly sandy coastal soils and brigalow scrub trees--irrigation, and widespread destruction of rabbits. Other measures which are increasing production include the control of wild dogs and kangaroos, control of cattle ticks and pleuropneumonia, and the development of more adaptable livestock, particularly heat-resistant cattle for Northern Australia.

Considerable impetus has been given pastoral industries by the liberal land policies of the State and Commonwealth Governments, and through the price support program for beef, lamb, and mutton, under the terms of a 15-year meat agreement with the United Kingdom. Programs to support domestic and export prices for dairy producers have given them a comparative advantage over beef cattle and wool producers.

Australian meat output totals about 2.9 billion pounds, and domestic consumption about 2.3 billion pounds, leaving about 600 million pounds for export. Australia depends upon exports to market approximately one-fifth of its production of frozen, chilled, and cured meat and 80 percent of its canned meat. Historically, the United Kingdom has by far been the principal market, generally taking over 90 percent of Australia's meat exports before World War II. Since the war, the proportion has gradually declined, and during 1957-58 the United Kingdom accounted for 76 percent of the total meat trade.

Beginning in 1952, under the 15-year agreement, Australia's exports of meat to the United States and other countries not under the British flag were limited to small amounts under a so-called free quota. The free quota was changed periodically but was effective in limiting exports to the United States. On October 1, 1958, there was a major change in the agreement. Lower quality beef and all grades of lamb and mutton were freed from quota restrictions, and there was an immediate large increase in shipments of meat, mostly frozen boneless beef and mutton to the United States.

Generally, the United States offers a more attractive market for Australian meat than the United Kingdom. However, shipping costs to the United States, including customs duties, are considerably more than those to England.

Australia may continue to export frozen beef and mutton to the United States in large enough quantities to offer competition for U. S. producers. This would mainly affect domestic beef prices, since imported mutton is more competitive with manufacturing beef than with other meats. Domestic prices of boneless beef and mutton could, however, decline substantially until they reach a level where imports from Australia would cease entirely. Imports of higher grade beef and lamb carcasses or cuts are not expected to be large enough to affect U. S. meat prices materially.

Imports tend to even out domestic meat supplies and to prevent extreme price fluctuations, which are characteristic of the livestock industry. The U. S. producer is in a good position to compete with foreign countries for the consumer's meat dollar. Domestic output is rising and is expected to continue upward for a number of years. Increased slaughter of lower grade cows, and efficient production of low-cost pork and poultry will tend to reduce the need for imported beef. Domestic producers have a freight advantage in being closer to market, and they can continue to supply chilled rather than frozen meat. Besides, dollars earned from imports of meat and wool soon return to the United States in mutually advantageous trade.

U. S. producers also face indirect competition from Australian producers in maintaining and expanding export markets for their surplus production. Last year the United States exported 35 percent of its production of tallows and greases, 22 percent of its production of cattle, calf, and kip skins, and 4 percent of its variety meats. Australia has increased exports of tallows and greases to Japan, the Union of South Africa, and the Federation of Rhodesia and Nyasaland at the expense of U. S. shipments. Its increased shipments of cattle hides are mainly to important U. S. export markets.

Australia is our second largest supplier of sheep, lamb, and goat casings and our sixth largest supplier of sheep and lamb skins. On the other hand Australia is our second largest market for hog casings, of which we are a large net exporter.

U. S. wool producers are insulated from the effects of large imports of apparel wool by the tariff and the domestic incentive payment program. Were it not for the tariff, domestic wool prices would fall to the world level and competition from imports would become apparent.

DESCRIPTION OF LIVESTOCK AND MEAT INDUSTRY

Importance

Meat and livestock products contribute a substantial part to Australia's national income and foreign exchange earnings. Although its manufacturing industries now provide the largest share of the national income, Australia continues to rely on the products of its pastures and farms, not only as raw materials for many of its processing industries, but as its main source of foreign exchange.

Livestock producers (excluding dairy) received approximately 22 percent of the national income during 1956-57. The livestock industry is the most important segment of Australian agriculture, accounting for 58 percent of the value of all agricultural production for the above period, excluding the value of dairy products.

Meat and livestock products were also the most important export items and collectively made up 57 percent of the total value of 1956-57 exports.

The wide open spaces of Australia are ideal for pastoral production; even areas with low and erratic rainfall are used to advantage. Wool production is Australia's leading industry, and Australia's flocks, comprising about one-sixth of the world's sheep, produce almost one-third of the world's wool. Besides being the world's foremost wool-growing country, Australia is also one of the leading producers of meat and dairy products. Queensland and the Northern Territory are the main beef-cattle breeding grounds.

TABLE 1.--Agricultural products: Exports, year ending June 30, 1956-59

Product	1956	1957	1958	1959 ¹
	<i>Million dollars</i>	<i>Million dollars</i>	<i>Million dollars</i>	<i>Million dollars</i>
Livestock:				
Wool, raw.....	766	1,085	852	661
Beef and veal.....	52	52	48	87
Mutton.....	4	3	5	7
Lamb.....	18	11	14	16
Pork.....	1	1	1	2
Canned meat.....	41	30	34	29
Total.....	882	1,182	954	802
Dairy:				
Butter.....	65	58	35	43
Cheese.....	8	9	4	10
Condensed milk.....	9	10	12	11
Dried milk.....	12	14	12	12
Total.....	94	91	63	76
Other agricultural:				
Wheat.....	148	183	96	132
Other grains.....	37	39	28	54
Fruits.....	69	52	75	60
Sugar.....	55	65	78	72
Miscellaneous.....	87	87	83	79
Total.....	396	426	360	397
Grand total.....	1,372	1,699	1,377	1,275

¹ Preliminary.

Livestock Types

Cattle. --During 1957, cattle numbers in Australia reached an all-time high of 17.3 million head of which an estimated 12.2 million were beef cattle and 5.1 million dairy animals. Between 1920 and the end of World War II, there was little change in the long-term upward trend in cattle numbers, although in some periods, numbers declined because of droughts.

The postwar expansion of the Australian cattle industry has been striking. From 9.2 million head in 1949, beef cattle numbers rose to 12.1 million in 1957. Even more

significant has been the increase in beef productivity per head. Production of beef and veal rose from 1 billion pounds in the year ending June 30, 1945, to 1.8 billion for the year ending June 30, 1957.

TABLE 2.--Cattle and calves: Balance sheet of numbers, year ending March 31, 1954-59

Item	1954	1955	1956	1957	1958	1959 ¹
	<i>Million head</i>	<i>Million head</i>	<i>Million head</i>	<i>Million head</i>	<i>Million head</i>	<i>Million head</i>
Number, April 1.....	15.2	15.6	15.8	16.5	17.3	16.9
Calf crop ²	4.9	4.8	5.4	5.9	5.1	5.1
Total supply.....	20.1	20.4	21.2	22.4	22.4	22.0
Calf slaughter ³	1.3	1.3	1.5	1.7	1.7	1.8
Cattle slaughter ³	3.2	3.3	3.2	3.4	3.8	3.8
Total slaughter ³	4.5	4.6	4.7	5.1	5.5	5.6
Number, March 31.....	15.6	15.8	16.5	17.3	16.9	16.4
Total distribution.....	20.1	20.4	21.2	22.4	22.4	22.0

¹ Preliminary estimates. ² Derived from numbers and slaughter. ³ Fiscal year ending June 30.

Australian Commonwealth Bureau of Census and Statistics.

During the postwar period, producers in Northern Australia, who supply most of the export market, embarked on an extensive development program, stimulated by a guaranteed market for beef at acceptable prices. In the southern States, the increasing demand for good-quality beef in the rapidly growing cities at satisfactory prices encouraged many producers to add beef cattle to other farming activities.

Although there has been substantial investment in pasture improvement, most of Australia's beef cattle are still raised on the coarse pastures in the northern areas. Herefords, supplemented by Aberdeen Angus, are the main beef breeds. Brahman and Santa Gertrudis cattle have been introduced into Northern Australia and, although they represent only a small percentage of the total beef animals, have proven to be highly adaptable in resisting heat and insects in the tropical areas.

In recent years, there has been a pronounced tendency to market younger animals. Evidence of this trend is found in the higher rate of slaughterings, compared with the rate of expansion in cattle numbers. Larger slaughterings were not achieved, however, at the expense of breeding stock, for cow numbers have also shown a marked increase.

Current beef prices are encouraging a sharp increase in the concentration of cattle in areas which are adaptable to cattle raising and where sheep are not common. The principal beef cattle areas are in Queensland, the Northern Territory, and the northern part of Western Australia. These are the warmer areas of Australia where properties are not fenced to keep dingoes (wild dogs) out and sheep in. These areas include considerable spear grassland, which when mature is harmful to sheep. In other parts of the country such as New South Wales and Victoria there has also been a considerable increase in cattle raising. In these areas, cattle are usually raised in conjunction with sheep or on wheat farms. When pastures are improved, there is a tendency to raise

TABLE 3.--Cattle and calves, sheep and lambs: Numbers and total slaughter, averages 1936-55, annual 1956-58

Year	Cattle and calves			Sheep and lambs		
	Number on farms ¹	Total slaughter ²	Slaughter as percent of number	Number on farms ¹	Total slaughter ²	Slaughter as percent of number
	<i>Million head</i>	<i>Million head</i>	<i>Percent</i>	<i>Million head</i>	<i>Million head</i>	<i>Percent</i>
Average:						
1936-40.....	13.3	3.5	26	112.6	18.7	16.6
1941-45.....	13.8	3.2	23	120.2	24.3	20.2
1946-50.....	14.0	3.3	24	103.3	18.1	17.5
1951-55.....	15.3	4.1	27	122.8	19.4	15.8
Annual:						
1956.....	16.5	4.7	28	139.1	20.8	15.0
1957.....	17.3	5.1	29	149.8	20.3	13.6
1958.....	16.9	5.5	33	149.3	25.6	17.1

¹ From 1936 through 1942 livestock numbers were reported as of Jan. 1; since 1943, on Mar. 31.

² Year ending June 30.

more cattle. Cattle and sheep are complementary in their use of feed. Intestinal parasite control in sheep is easier when cattle and sheep are raised together, as the cattle help to break up the parasitic life cycle.

Dairying is an important farm enterprise in Australia, and dairy cows contribute significantly to Australia's beef and veal production. In 1958, dairy cattle numbered nearly 5 million head--nearly one-third of the total cattle population. The industry is largely centered in a fairly narrow belt along the southern and eastern coast extending from Southern Australia to Central Queensland, and is mostly confined to the areas of higher rainfall. These cattle provide milk and other products for Melbourne, Sydney, Brisbane, and other population centers, and also produce large quantities of butter and cheese for export. Dairy farms are much smaller than the sheep or beef-cattle properties, but usually occupy better lands. Dairy farmers usually make maximum use of grazing and feed little grain or harvested roughage. Cows usually calve in the spring, and much less milk is produced when pastures are poor in the fall and winter. There is little seasonal variation in prices received by farmers for milk or butterfat. Accumulated stocks of butter and cheese move to export at regular intervals, even during the winter when production is low. Most of the cows milked are dairy Shorthorns and Jerseys. The Australians have developed a strain of milking Shorthorn known as the Illawarra.

Cull cows from dairy herds eventually move to slaughter. Many farmers operate a dual-purpose system, milking part of the cows and letting calves run with the remainder. Calves are usually marketed for slaughter at 400-600 pounds. Such calves, known as vealers, are in good demand by the domestic trade and usually bring higher prices per pound than more mature steers.

Sheep. --Australia is climatically well adapted to sheep raising; its sheep population of almost 150 million head is the largest in the world. It is the world's major producer and exporter of wool; and wool, as the country's major foreign exchange earner, is the backbone of its prosperity.

The longtime trend in sheep numbers has been upward, although interrupted by several severe droughts. In the 1940's, for example, droughts cut numbers sharply, carrying them to a recent low of 96 million in 1946. Then a series of favorable years boosted the total to 150 million head in 1957--an all-time high. Numbers declined slightly

in 1958. The sharp rise in numbers from 1951 to 1957 was due to favorable weather conditions, high prices for wool and meat, large-scale destruction of rabbits by myxomatosis, and rapid expansion of improved pastures.

Wethers make up a large proportion of Australia's sheep population, for their wool continues to be relatively profitable, and there is a fairly good demand year in and year out for aged wethers for fattening and slaughter. In 1958, there were an estimated 149 million sheep, of which 29 percent were wethers and 51 percent ewes over a year old. Lambs under a year accounted for 19 percent of the total; rams, for only slightly more than 1 percent.

Approximately 44 percent of Australia's sheep are in New South Wales, 18 percent in Victoria, 15 percent in Queensland, 11 percent in Western Australia, 10 percent in South Australia, and 2 percent in Tasmania. There are a few thousand in the Capital and Northern Territories.

Over three-fourths of the sheep in Australia are of the Merino breed and an additional 5 percent are Merino "comebacks" (animals with more than half Merino blood). Approximately 10 percent consists of other crossbreds, and 8 percent of other pure breeds.

Lamb crops on sheep farms are low, even though most sheep are raised under fence and many on excellent pasture. Farmers are reluctant to incur additional expense to save more lambs. In the drier areas of Australia, ewes may not be bred to lamb until they are nearly 3 years old. In unfavorable years, it is common for sheepmen not to mate their ewes at all, thus saving feed to maintain existing flocks.

Generally, at current prices, established sheep farms will continue to raise sheep and continue to receive most of their returns from wool, as in the past. There will also be some further shift from production of wethers to production of ewes and lambs.

Shipments of boneless mutton to the United States have created a market for old ewes and wethers, which otherwise would be carried on the farms until death.

Wool production, per sheep, has continued to increase steadily over the years, and total production is now at a high level. In the years ahead, it may be more difficult to increase the average weight of wool per sheep, for sheep may tend to be shifted to the drier, less productive areas and to be replaced by cattle on the better grazing lands.

Hogs. --Australia's hog population is relatively small compared with its cattle and sheep. Hog numbers reached a peak of 1,749,000 head in 1944 and then declined gradually to a low of 993,000 in 1953. Since that date, they have recovered gradually to reach 1,421,000 by 1958.

Most hogs are produced on dairy farms, where they are fed skim milk and whey, limited amounts of barley, oats, wheat and wheat byproducts, sorghum grains, and corn. Few are raised on a basic diet of cereal grains supplemented with protein meal, as in the United States.

In recent years, pork production has been almost entirely for the domestic market. Less than 2 percent of the output has been exported since 1956, although during and immediately after World War II, approximately 20 percent of the total production was marketed abroad.

Horses. --The number of horses has declined continually since 1935, largely reflecting the mechanization of agriculture and after a temporary increase during the gasoline shortages of the depression years. The number in March 1958 (695,000) was the lowest recorded since 1875, and was only 28 percent of the 1919 record of 2,527,000.

Large numbers of riding horses are used on the cattle ranches of Queensland and the Northern Territory. In other parts of the country and on sheep ranches, few horses are required. Farm cultivation and crop production is usually mechanized so that few draft horses are needed.

Meat Industry

Slaughter Trends. --For the year ending June 30, 1958, cattle and calf slaughter reached a record high of 5.5 million head. There has been an upward trend in the slaughter of bovine animals for the past 6 years, and the above figure represents an increase of 49 percent over the 3.7 million head slaughtered during 1952.

The proportion of cattle and calves slaughtered to total numbers has increased significantly within the last 10 years. This higher rate of productivity has been caused chiefly by the favorable prices that have encouraged producers to market livestock at a younger age. In part, it is due to the fact that many old cows are now salable, whereas in former years they died on the range. It has also been the result of the general technological improvement which accompanied the intensification of agriculture.

Over the years, sheep slaughter has not increased relative to numbers as much as cattle slaughter has.

However, sheep and lamb slaughter for the year ending June 30, 1958, amounted to 25.6 million head, a sharp increase over the previous year, and the highest since 1944 when a record 26.6 million head were marketed. Slaughterings had reached a postwar low of 15.8 million head in 1951. Since 1953, the annual slaughter has exceeded 20 million head.

Hog slaughter reached its highest level during World War II, when an alltime high of 2.6 million head were slaughtered during the year ending June 30, 1942. For the 10-year period, 1947-56, annual hog slaughter averaged 1.6 million head.

Fresh Meat. --Australian meat production, on a fresh bone-in basis, reached a record high for the year ending June 30, 1958, amounting to nearly 2.9 billion pounds. Since 1955, each year's outturn has established a new record. A slight decline in beef and veal production in 1958 was more than offset by an increase in mutton and lamb.

TABLE 4.--Meat: Production, by commodity, averages 1936-55, annual 1956-58

Year ending June 30--	Beef and veal	Mutton	Lamb	Pork	Total
	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>
Average:					
1936-40.....	1,225	462	246	199	2,132
1941-45.....	1,131	539	342	262	2,274
1946-50.....	1,183	403	298	213	2,097
1951-55.....	1,492	509	253	195	2,449
Annual:					
1956.....	1,682	524	327	211	2,744
1957.....	1,826	502	320	199	2,847
1958.....	1,738	585	336	220	2,879

Beef and veal production reached a peak of 1.8 billion pounds in 1957 and declined only slightly during 1958. Although the number of cattle and calves slaughtered during 1958 exceeded the previous year's kill, carcass weights were lighter because of dry weather and resultant deterioration in pastures.

Mutton and lamb production reached a postwar high of 921 million pounds in 1958, a level which had previously been exceeded only in 1943 and 1944.

Pork production reached 220 million pounds in 1958, slightly higher than the average for the past 10 years, but considerably below the annual average of 262 million pounds for the period 1941-45. Approximately 120 million pounds of each year's pork production is cured and processed as bacon and ham and the remainder marketed as fresh pork.

Canned Meat. -- Since World War II, the canned meat industry has expanded significantly and has become an important contributor to Australia's export income. Production continued on an upward trend until 1953, when the output reached a record high of 210 million pounds. Since then, it has remained fairly high. In 1959, meat-canning operations declined to relatively low levels because of more attractive outlets for processing-type beef and mutton in export markets.

Beef packs have always comprised the larger part of the canned meats produced, and mutton packs have usually been next in importance. Canned bacon and ham became increasingly important up to 1953, but have since declined. Mixed meat and vegetables comprise the bulk of the remainder. Only negligible quantities of lamb have been canned.

TABLE 5.--Canned meat: Production by commodity, year ending June 30, 1954-58

Commodity	1954	1955	1956	1957	1958
	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>
Corned beef.....	24.5	52.2	58.3	37.5	35.7
Minced beef loaf.....	22.5	17.5	16.2	23.8	26.3
Other beef.....	49.0	32.1	32.5	40.6	51.8
Corned mutton.....	5.8	3.1	4.7	1.5	8.2
Other mutton.....	14.3	9.6	9.1	9.1	13.8
Bacon and ham.....	8.9	7.6	6.9	7.9	8.5
Other pork.....	.6	.6	.2	.2	1.1
Camp pie ¹	4.4	4.9	9.6	7.8	11.7
Other mixed meat.....	13.2	15.7	5.6	6.4	4.2
Sausage.....	.8	1.3	1.1	1.3	1.3
Meat and vegetables.....	16.1	20.7	13.9	18.6	11.4
Total.....	160.1	165.3	158.1	154.7	174.0

¹ Mixture of ground meat and cereals.

Only about one-eighth of the canned meat production is consumed in Australia and the industry is therefore based almost entirely on the export market. In the record year 1953, the value of exports of canned meat was one-third greater than the value of all carcass meats exported. For the 2 fiscal years 1957 and 1958, the value of canned meat exports was approximately one-third that of carcass meat exports, but it fell to less than one-quarter of carcass meat exports in fiscal 1959.

Domestic Consumption. -- In recent years, per capita meat consumption has declined approximately 20 pounds from the prewar (1937-39) average. On the other hand, total consumption has increased because of the rapid rise in population. Australians now consume around 2.2 billion pounds of meat annually, compared with the 1937-39 average of 1.7 billion pounds. About three-fourths of the total meat production is consumed domestically--the same proportion as before the war.

TABLE 6.--Meat: Estimated total and per capita consumption, by commodity, average 1937-39, annual 1955-58

Commodity	Average 1937-39	1955	1956	1957	1958
TOTAL	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>
Beef and veal ¹	990	1,060	1,109	1,232	1,178
Mutton ¹	410	475	457	446	484
Lamb ¹	103	237	244	264	273
Pork ¹	72	92	90	83	96
Variety meats.....	58	99	94	96	112
Canned meat ²	(³)	27	31	31	(⁴)
Bacon and ham ⁵	72	72	69	67	(⁴)
Total ⁶	1,738	2,106	2,157	2,262	(⁴)
PER CAPITA	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Beef and veal ¹	144	117	119	129	121
Mutton ¹	60	52	49	47	50
Lamb ¹	15	26	26	28	28
Pork ¹	10	10	10	9	10
Variety meats.....	8	11	10	10	12
Canned meat ²	(³)	3	3	3	(⁴)
Bacon and ham ⁵	10	8	8	7	(⁴)
Total ⁶	253	232	232	237	(⁴)

¹ Bone-in weight. ² Canned weight. ³ Included under fresh meat at its carcass weight.
⁴ Not available. ⁵ Cured weight. ⁶ In terms of carcass weight.

Wool

Australia is the world's major wool producing and exporting country. Its wool trade has been built not only on volume but on the outstanding quality of its fleeces. The country produces apparel wool, which can be divided broadly into two classes, Merino and cross-bred. Merino is finer and softer than crossbred and is used extensively for the manufacture of quality fabrics. Virtually all of the Australian production is of the types produced in the United States.

TABLE 7.--Wool: Production, greasy basis, averages 1936-40, annual 1956-59

Year ending June 30	Production	Year ending June 30	Production
<i>Average:</i>	<i>Million pounds</i>	<i>Annual:</i>	<i>Million pounds</i>
1936-40.....	1,018	1956.....	1,417
1941-45.....	1,129	1957.....	1,564
1946-50.....	1,023	1958.....	1,433
1951-55.....	1,202	1959 ¹	1,459

¹ Estimated.

Australian wool production reached a record high of 1,564 million pounds (greasy basis) during the year ending June 30, 1957, and amounted to 31 percent of the world's

output. Between 1945 and 1957, the country's wool production increased 67 percent. Because of drought, production declined 8 percent during 1958, but the total clip was higher than in any previous year except 1957.

Wool is produced in all of Australia's States, but New South Wales is by far the most important producer, accounting for 42 percent of the total clip in 1957. Victoria, with 19 percent of the output, is the second most important State; Queensland ranks third with 15 percent.

Drought, overstocking, changes in land use, and the rabbit menace have caused a number of fluctuations in the long-term upward trend in sheep numbers and wool production. Rabbits have long competed with sheep for the grasslands, and have ruined large tracts by eating the grass down to the roots. It has been estimated that seven rabbits eat as much as one sheep, and they were particularly damaging in periods of drought when the need for available grasses became acute.

Tallow and Lard

Although Australia ranks third as a world producer of tallow, it accounted for only 6 percent of the world total in 1958, even though its production in that year set a record. Exports of tallow have been rising, but over two-thirds of the production is normally consumed at home.

The production of lard in Australia is an insignificant part of the world total. In 1958, production amounted to only 0.2 percent of the world lard output.

TABLE 8.--Tallow and lard: Production, average 1951-55, annual 1956-58

Commodity and period or year	Production	Commodity and period or year	Production
Tallow:	<i>Million pounds</i>	Lard:	<i>Million pounds</i>
Average 1951-55.....	243	Average 1951-55.....	10
Annual:		Annual:	
1956.....	296	1956.....	11
1957.....	332	1957.....	11
1958.....	369	1958.....	15

PRODUCTION

Potential

There is a large potential for increased livestock production in Australia, despite a 30-percent increase in livestock numbers since World War II. Production can be further increased by expanding grazing areas, clearing land now in brush, and reclaiming sand-dune areas where rainfall is adequate. The carrying capacity of pastures can be more than doubled by fertilizing and seeding with improved varieties of grass and legumes. Water conservation measures, such as construction of reservoirs and drilling of wells, would make it possible to raise livestock in many areas not now being utilized. The application of only trace element fertilizers would greatly increase grazing capacity in some extensive regions.

Stimulated by a guaranteed market for the exportable surplus at acceptable prices, and by the consumption needs of a rapidly increasing domestic population, the postwar expansion of the Australian livestock industry has been spectacular. There is abundant evidence that the limit in progress has by no means been reached. By 1958, cattle numbers were 27 percent above the 1936-49 average, and sheep numbers 33 percent higher.

Production Factors

Drought. --Recurring cyclical droughts limit the number of livestock that can be raised and result in forced marketing of livestock and at times heavy death losses. Seasonal droughts in Northern Australia act as a limiting factor also; cattle gain weight during the rainy season but lose during the dry period. The low nutrient value of native grasses and the absence of a good source of protein supplement in Australia makes it difficult for cattle to maintain weight during periods of low rainfall.

Pasture Improvement. --Many native pastures have been improved by applying phosphate and seeding with soil-building legumes; these practices make it possible to seed improved grasses later. Certain areas are responding also to applications of trace elements. Since the war, there has been a substantial investment in pasture improvement, and the current area in improved pastures is one-third larger than the land area in all crops.

Supplemental Feed Production. --Only a relatively small percentage of beef cattle and sheep receive any supplemental feed, but production of feed crops is expected to increase significantly as livestock numbers become more concentrated. Currently, about 2 million acres are used annually for hay production, and 3 million for green fodder. Most of the hay is produced from oats, alfalfa, and native grasses; the green fodder consists largely of oats, alfalfa, and barley. Most of the harvest from the 400,000 acres planted to grain sorghum and corn is used for supplemental feeding of livestock. Other measures which might increase livestock production are the feeding of protein supplements such as urea to grazing animals. Methods may be found to increase the intake of dry native pastures. Utilization of dry grass has been increased by spraying with molasses.

Reclamation of New Land. --Sandy soils in heavy rainfall areas along the coast are being put into pasture by application of trace elements and fertilizer.

There are about 20 million acres covered with brigalow scrub trees. These areas are being cleared by machinery or by ringbarking the trees to kill them. Experiments have shown that some land of this type can be developed for pasture and cropland by aerial spraying of herbicides.

Irrigation. --Considerable development of irrigation projects is under way, particularly in the eastern and southern parts of Australia where dams impound runoff from melting snows in the highlands. Large areas of land in other regions could be irrigated from wells and from dams impounding rainwater, but the expense of such development would require that the land be used for crops rather than for pasture. However, it is probable that some livestock could be raised in conjunction with the crops.

Development of stock-water reservoirs and wells has greatly reduced the drought hazard to livestock producers.

Control of Pests and Diseases. --Large-scale eradication of rabbits has been accomplished by introducing a virus disease known as myxomatosis. More recently, rabbits have been developing an immunity to this disease and a poison called "1080" has been employed. Rabbits are no longer a serious problem and large areas on which the grass was destroyed by them have been restored. Other animals such as the kangaroo and wallaby also consume large amounts of forage, but numbers are being held in check by hunters. Dingoes, or wild dogs, are a serious menace to sheep and in some areas kill a number of small calves. Fences to protect sheep from these hazards are expensive to build and maintain. A dingo-proof fence of 3,500 miles is now being constructed in Queensland, a cooperative effort between producers and the State Government.

Internal parasites, blowflies, and foot rot cause considerable losses to sheep raisers and are most serious in the higher rainfall areas. Sometimes these cause death

Sheep graze on Australia's vast pasture lands. Much is now being done to improve pastures with commercial fertilizer.



Angus bull that won first in class at Royal Easter Show, Sydney, 1959. Right, Hereford cattle ford river.



Stud Dorset Horn ewe and twin lambs on irrigated pasture in New South Wales. Right, top-of-ground grass silage pit is inexpensive way to conserve feed.



losses, but generally they cause loss of weight and poor condition of the flocks. Preventive treatment is costly, particularly on extensive operations, owing to the high price of medications and labor in relation to returns per animal.

Large areas, especially in Queensland, are unsuitable for sheep because of spear-grass. This plant has sharp points which penetrate the skin of the sheep, particularly lambs, causing intense pain which makes the animals neglect food and water. When young and before the spines have formed, speargrass has some value as pasture. However, experiments are being made to find an economical method of eradicating this grass and replacing it with a desirable species.

A broad belt of Northern Australia is infested with ticks, which frequently infect cattle and horses with tick fever. Efficient tick control requires several treatments a year in dipping vats. Also, additional dipping is required when cattle are moved to tick-free areas. A complete eradication of ticks has not been accomplished because of the failure of ranchers to round up all animals at each dipping. Usually, enough animals are left untreated to reinfest the herds. However, the tick-free area has continued to be enlarged with closer settlement, and more cross fencing of pastures makes tick eradication practicable. Dipping for ticks also helps to control flies that harass the livestock.

Strict supervision is maintained to prevent the spread of pleuro-pneumonia from infected areas of Queensland and the Northern Territory to other areas of the Commonwealth.

Breed Improvement. -- Better strains of livestock would be an important factor in increasing production. Experiment stations in the warmer areas of the country have found that Shorthorns crossed with Brahmans and Africanders produce more weight gains than either pure Shorthorns or Herefords.

The introduction of Brahman blood into herds in the tropical region has improved heat tolerance and resistance to ticks. The Santa Gertrudis breed is currently in strong demand for the same reasons. However, quarantine regulations prevent the importation of any new breeding stock.

Government Assistance

The government has aided livestock producers through Commonwealth and State expenditures of public money to assist the pastoral industry and through its dairy and livestock price-support programs.

Encouragement of Pastoral Agriculture. -- Commonwealth and State Governments have made a substantial outlay of public money to provide assistance and stimulus to cattle and sheep production. These governments are helping both to build and to maintain stock-water reservoirs and also to drill wells along stock routes. Pest eradication programs have been intensified and research programs accelerated.

Much of the underdeveloped or partially developed land in the country is owned by the Crown and leased to producers for varying periods, usually about 20 to 99 years. There is keen competition for the leases when they become available. Preference is often given to Australian war veterans. Prospective lessors must buy the existing improvements and agree to make certain improvements such as ringbarking trees, developing water, or fencing. As long as the producer pays for the lease and complies with its provisions, he retains the use of the land. Prospective ranch operators may also buy deeded land or purchase established ranches, using partly deeded and leased land. They can also sublease crown lands from other operators. There has been such inflation in deeded land values since the beginning of World War II that it is difficult to produce livestock and capitalize on the land investment. At present, lessors of crown lands have some advantage in this respect, even though rentals also have risen sharply.

Cash costs of improving pastures by top dressing, planting, ringbarking trees, and control of rabbits and marsupials are considered as operating expenses under Commonwealth law rather than as capital improvements. This fact provides considerable incentive for graziers to spend money in improving the productive capacity of their holdings, since they thereby reduce their income taxes.

Many large properties are being subdivided into smaller units by the refusal of the government to renew leases when they expire. The "closer settlement" policies are political and controversial. However, the objective is to create units small enough to be properly developed, but large enough to constitute an economic unit. One argument is that large graziers have been using the land at low rentals and have not made enough progress in pasture improvement and other developments. On the other hand, some claim that the smaller subdivisions will soon revert to the former operators because the new operators do not have the experience and funds to develop them.

Support Program for Beef, Lamb, and Mutton. --During World War II, the United Kingdom purchased the bulk of Australia's meat surplus at negotiated prices. Quantities for export to other markets were limited by mutual consent of both governments. Overall control of the meat industry in Australia was vested in the Controller of Meat Supplies until the end of 1946, when control reverted to the Australian Meat Board under prewar legislation. The United Kingdom continued to purchase meat from Australia until 1952 under short-time contracts.

The current 15-year agreement with the United Kingdom, which came into force July 1, 1952, was designed to bring about an increase in Australia's meat production and to provide an export market for its surplus production. Australian livestock producers were assured minimum prices for each type of meat. When prices fall below guaranteed minimums, the deficiency is made up by the United Kingdom, which periodically pays the Australian Government. This is passed on to the producer through "bounty" payments made on frozen meat delivered into store for export.

United Kingdom deficiency payments during the 4-year period ending June 30, 1958, were equivalent to \$22.5 million. Australia paid substantial "bounties" on beef and thereby supported prices of live cattle.

In December 1957, the Australian Meat Board announced a new "chiller" grade of export beef and in order to stimulate production, offered a subsidy of 5 cents per pound on 1st-quality and 2d-quality boneless steer, heifer, and cow beef. The same rate was also paid on bone in trimmed rump, loins, and ribs from 1st-quality and 2d-quality steers, heifers, and cows. The rate on 1st-quality and 2d-quality hindquarter beef and crops¹ was 3 cents per pound.

The bounty on the new "chiller" grade of beef to the United Kingdom, whether shipped chilled or frozen, was intended to encourage production and export of this class of beef, which was particularly sought after in the United Kingdom, and to provide an added incentive to produce high-quality, lightweight carcasses. The bounty on boneless and bone-in cuts of beef was to promote marketings of frozen wholesale cuts in cartons to meet a steady gain in demand for such meat in the United Kingdom. The packaged meat can be suitably trimmed and presented more attractively to the buyer. Boning and trimming also result in appreciable savings in freight.

At the end of 1958, Australia halted all bounty payments, since it was considered that export prices had reached high enough levels so that further subsidies were unnecessary.

Periodic reviews have been made of the minimum prices under the 15-year agreement, taking into account variations in production costs and prices paid by the United

¹ A crop is the forequarter with the brisket and plate removed. As cysts of the nodular worm are often found in these cuts, they are removed from the carcasses before export.

Kingdom to other suppliers. In late 1958, the United Kingdom guaranteed Australian suppliers a minimum price level on beef through 1961-64 equal to 91 percent of actual prices in 1958-61. Guaranteed lamb prices for 1958-60 are set at 95 percent of the 1955-58 level. Mutton prices for the same period are guaranteed at 85 percent of the 1955-58 level.

Government Payments on Dairy Products² --The Commonwealth Government has paid a subsidy to the dairy industry since 1942; since 1950, this have been on a substantial scale. Although this subsidy is variously regarded as a consumer subsidy on one hand and a production bounty on the other, it appears to be a combination of both. Retail prices to consumers are held down by this arrangement. It is believed that a substantial rise in butter prices would result in a swing to margarine, forcing more butter on the export market and diminishing overall returns.

The Commonwealth Government supports prices to dairy producers mainly by payments to butter and cheese factories. An Equalization Committee determines the price support level at the beginning of each season, based on the value of the best quality butter. Factories adjust purchase prices on the basis of this value. If export or local sales realize more than the equalization value, the difference is paid to the Committee. However, if sales on the export of local market are less than the equalization value, the difference is obtained from the Equalization Committee. The bounty on production is based upon the quality of dairy products consumed in Australia, plus 20 percent. The aggregate amount of the bounty, however, is spread over total dairy output, thereby lowering both domestic and export prices.

The subsidy gives a comparative advantage to the dairy industry. Were it not for this special treatment, dairying would tend to decline and the productive resources now used by the industry would be transferred to other enterprises, particularly to beef cattle and sheep. The subsidy program is most beneficial to the high-cost dairy producers, such as those along Queensland's northern coast.

TRADE IN ANIMAL PRODUCTS

Recent Shift in Trade Patterns

Australia depends upon exports as a market for approximately one-fifth of its production of frozen, chilled, and cured meat. In addition, 80 percent of its canned meat is sold abroad. In terms of carcass equivalent, approximately one-fourth of total production is exported. This is about the same as in prewar (1937-39).

During the period 1954-58, meat exports including canned meat reached a record level and were 22 percent above the 1936-40 average, the previous period of heavy shipments. Although foreign sales of chilled and frozen meat showed some decrease from prewar, this was more than offset by exports of canned meat, which climbed from a relatively insignificant prewar level to 23 percent of the total meat shipped during 1954-58.

Historically, the United Kingdom has been by far the principal market for Australian meat, generally taking over 90 percent of its exports before World War II. Since the war, the proportion has gradually declined, and during 1957-58 the United Kingdom accounted for 76 percent of total meat trade.

Shipments to the United States reached a significant level for the first time in 1957-58--almost 6 percent of the total.

Beef and veal have generally been the major export, and in 1957-58 they accounted for half of the total meat shipments. Canned meat made up 24 percent of exports, mutton and lamb 20 percent, and variety meats most of the remainder.

² For more details on government aid to the dairy industry, see Australia's Dairy Industry: Competitive Aspects, FAS M-25, Foreign Agriculture Service, U. S. Department of Agriculture, November 1957.

TABLE 9.--Meat: Exports by commodity as a percentage of production, 1936-55, annual 1954-58

Year ending June 30--	Beef and veal	Mutton and lamb	Pork	Canned meat
Average:	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
1936-40.....	21	29	18	45
1941-45.....	13	22	22	32
1946-50.....	16	21	10	72
1951-55.....	14	13	5	82
Annual:				
1954.....	18	12	4	88
1955.....	17	15	4	80
1956.....	19	14	2	81
1957.....	19	10	1	72
1958.....	16	12	1	76

TABLE 10.--Beef and veal: Exports by country of destination, year ending June 30, 1955-58

Country of destination	1955	1956	1957	1958	1959 ¹
	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>
United Kingdom.....	216.4	250.2	270.0	209.9	282.7
United States.....	1.1	2.7	4.5	13.7	58.0
Malaya.....	9.9	10.3	12.1	11.2	8.3
Japan.....	3.4	2.7	17.2	6.7	2.2
Western Europe ²	9.6	17.9	7.6	6.3	2.7
Philippine Republic.....	4.9	8.7	8.5	6.0	2.7
Hong Kong.....	4.3	3.8	9.6	5.6	2.7
Other countries.....	21.9	26.7	17.5	17.9	16.3
Total.....	271.5	323.0	347.0	277.3	375.6

¹ July 1958--March 1959. ² France, Belgium, Netherlands, and Western Germany.

Under the 15-year agreement, Australia's exports of meat to countries other than the United Kingdom, British Colonies and Dependencies were limited to a small "free quota" to be determined periodically. The free quota was not less than 3 percent of exports to the United Kingdom. This agreement was effective in limiting exports to the United States as well as other areas until October 1, 1958, when a major alteration removed lower quality beef and all grades of mutton and lamb from quota restrictions. The free quota then applied only to 1st-quality and 2d-quality beef, on which an annual quota of 7,500 long tons (16.5 million pounds) could be marketed outside the United Kingdom. Pork, canned meat, and all other meat products had previously been exempted from control. After 1961, no restrictions will be applied with respect to destinations for meat exports.

Immediately after the restriction was lifted, shipments to the United States, stimulated by the relatively high prices in that market, increased sharply. For the 9 months July 1958 through March 1959, exports of beef to the United States were 8 times larger than for the corresponding period a year earlier; mutton shipments were almost 4 times greater.

Beef and veal exports to the United Kingdom were also at a record level. Shipments for the above 9-month period exceeded the total for any previous year.

Sales of beef and veal under the "free quota" arrangements have mostly been to Continental Europe, Japan, Malaya, the Philippine Republic, and the United States. The only appreciable markets for lamb were Malaya and Canada. Markets for mutton were concentrated in Continental Europe, Malaya, and recently the United States.

Under the United Kingdom tariff, Australian meat receives preferential treatment and is entered duty free. The duty-free treatment was guaranteed on chilled and frozen beef for 5 years under terms of an agreement signed in 1957.

The United States generally offers a more attractive market for Australian meat than the United Kingdom. Cattle have been selling for the equivalent of about 7.5 cents a pound, live weight, at Queensland's slaughter plants. Canner and cutter cows, which supply the manufacturing beef, have been bringing about the same price per pound market as the better grades of Australian steers slaughtered for the United Kingdom.

Beef and lamb prices at Chicago are also considerably higher than prices at Liverpool, England. In the past, prices for mutton, lamb, and beef in Australia have largely been based on prices in the United Kingdom, minus transportation and other marketing costs.

The Australian Meat Board estimates total costs for moving meat from slaughter plants in Australia to distribution points in the United Kingdom at 4 cents a pound for beef, 4.5 cents for mutton, and 5 cents for lamb. It costs Australia more to land meat in the United States than in England because of the additional expense of U. S. customs duties. Approximate costs to the U. S. market for boneless beef are:

	<u>Cents per pound</u>
Ocean freight.....	3.5
Duty.....	3.0
Miscellaneous costs.....	1.5
Total	<u>8.0</u>

TABLE 11.--Meat: Comparison of wholesale prices, Chicago, Liverpool, and Brisbane, by type, May 14, 1959

Type	Chicago	Liverpool	Brisbane
	<i>Cents per pound</i>	<i>Cents per pound</i>	<i>Cents per pound</i>
Beef:			
Manufacturing cow carcasses.....	36.0	19.5	21.0
Manufacturing bull carcasses.....	39.0	---	---
Australian frozen steer forequarter crops ¹ ...	---	22.0	---
Australian frozen steer hindquarters.....	---	25.0	---
Domestic steer carcasses equivalent to U. S. good grade.....	44.0	34.5	21.0
Lamb:			
Domestic carcasses.....	45.0	39.5	26.0
Australian frozen carcasses.....	---	21.0	---
Ewe carcasses.....	---	16.0	8.0
Hog:			
Light butcher carcasses.....	² 25.0	21.5	31.0

¹ Minus plate and brisket.

² Average value of hog cuts and lard from a 200-220 pound hog.

Costs for frozen lamb carcasses would be slightly higher, for the duty is 3.5 cents per pound and freight is moderately greater. Prices of canner cows were much lower than in the United States. On the other hand, pork prices, wholesale in Brisbane, are somewhat higher than prices at Chicago.

A substantial number of live cattle are exported to the Philippine Republic and Hong Kong. Practically all of these cattle are shipped from Darwin, where there are no export slaughter facilities; as a result, the cattle are bringing only 5.5 cents a pound.

Principal Items of Trade

Frozen Boneless Beef and Mutton. --The modification of the 15-year agreement in October 1958 to permit increased Australian exports to non-Commonwealth markets coincided with a drop in production of manufacturing beef in the United States. Prices of boneless beef were high relative to prices of grain-fed beef; thus a general rise in beef prices caused an unusually strong demand for processing beef and attracted large supplies of frozen Australian boneless beef to the United States.

The shortage of processing beef has also attracted imports of boneless mutton, which is highly competitive with boneless beef. Australian boneless beef may be blended with fatter trimmings from domestic meat and sold as hamburger. It may also be used for such products as frankfurters, other sausages, and luncheon meats. Except in hamburger, a certain amount of boneless mutton may be added to these products. Boneless beef and mutton are usually contracted for on a 90-percent lean basis by U. S. importers. This product, therefore, is highly desirable because of the small amount of fat which it carries.

Australia usually has a surplus of old ewes and wethers as well as cull cows from both dairy and beef herds. Most of these have been used by Australia's meat-canning industry, but some carcasses have been exported, principally to the United Kingdom. However, U. K. import regulations specify that boneless beef be prepared so as to be in identifiable pieces and this places some limitation on exports of small pieces from Australia. The United States has no similar limitation. In recent years, and even at current

TABLE 12.--Mutton and lamb: Exports by country of destination, year ending June 30, 1955-59

Country of destination	1955	1956	1957	1958	1959 ¹
	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>
Mutton:					
United Kingdom.....	18.8	23.7	14.8	25.5	24.9
United States.....	.4	.2	.2	11.2	24.9
Malaya.....	2.0	2.7	1.6	2.7	2.2
Western Europe ²	5.8	2.0	4.0	1.8	1.3
Other countries.....	6.6	7.5	2.9	4.5	5.2
Total.....	33.6	36.1	23.5	45.7	58.5
Lamb:					
United Kingdom.....	85.6	73.7	44.6	56.0	74.8
Canada.....	1.8	3.4	3.8	3.8	7.4
Malaya.....	2.0	1.3	1.8	1.8	1.3
United States.....	.7	.9	.9	.2	2.2
Other countries.....	3.3	3.4	3.1	3.6	2.8
Total.....	93.4	82.7	54.2	65.4	88.5

¹ July 1958-March 1959. ² France, Belgium, Netherlands, and West Germany.

price levels, there are large numbers of cull sheep and cattle which are not marketed because returns would not equal the cost of transporting them to a slaughter plant. Meat marketed in boneless form has some advantages over carcass meat. It requires less storage space and can be stored for longer periods, thus permitting a steady supply during the slaughtering offseason. There is also some saving in transportation costs. For the U. S. market, there is a further saving, since import duties are the same per pound for bone-in as boneless.

Frozen Carcass Beef. --Despite recent increases in the volume of boneless frozen and chilled beef, the major part of Australia's beef is still exported as frozen, bone-in carcass meat. This is generally shipped in the form of hindquarters, forequarter crops, loins, and ribs. The United Kingdom takes over 80 percent of the frozen carcass beef.

Chilled Beef. --For a number of years, Australia has exported a limited quantity of chilled beef. Argentina, however, because of being closer to the United Kingdom, has dominated this trade. Chilled beef must be marketed within 50 days of being processed in order to maintain quality--a schedule Australia has had difficulty in meeting. Furthermore, slaughter is seasonal because most cattle are maintained on grass alone; Australia has been unable to supply chiller-quality beef which requires young, well-finished cattle on a yearround basis.

Another factor limiting the growth of the chilled-beef trade is the lack of transportation facilities to move cattle from grazing areas to fattening areas, and in some cases from fattening areas to slaughter plants and ports. Only a small percentage of Australia's beef would grade above good by U. S. standards, and the lack of high-quality beef in sufficient quantities limits exports of chilled beef to the United States. The better quality beef is available generally from November to June, but the domestic market takes practically all, except when export prices are sufficient to divert supplies.

Recently, shallow-draft vessels have been put into service to ship beef to England via a new route around the north coast of Australia, which cuts about 15 days from total shipping time. Previously, ships which drew a great deal more water were used to ship beef to England, but these could not sail loaded through the shallow Torres Strait and had to ply the South-About route, sailing westward around the southwest coast of Australia to get to the Suez Canal.

The North-About run takes about 28 to 30 days to complete the voyage, in contrast to 45 days on the regular southern route. This saving in time is important to the chilled-beef trade because shorter storage time means there will be less loss of quality.

Australian chilled-beef sales to the United Kingdom have been only a small part of total exports--mostly canned and frozen--to that market, and were not competitive with chilled-beef shipments from Argentina, New Zealand, and Ireland, or with British-produced supplies. Now, competition is growing because the new vessels can transport 2 million pounds of chilled beef in one trip.

Air transport of chilled meat from Australia to the United States in the future is a distinct possibility. However, this development will require more economical freight rates than at present.

Frozen Lamb. --Australia has increased its shipments of frozen lamb to the United States, and a further increase in this trade is expected. In 1957-58, lamb exports totaled 65 million pounds, of which 56 million, or 86 percent, went to the United Kingdom. Only a fraction of a percent of the total was shipped to the United States.

Some Australian firms are now packing boneless rolled shoulders, square-cut shoulders, trimmed lamb loins, legs, and other cuts for shipment to the United States. Australia has a large number of different types of lamb from which shipments could be made. Lambs generally are considerably lighter than those in the United States and carry much less fat. In addition, Australia had a large number of lightweight, relatively lean yearling wethers of a type that would be quite acceptable to many U. S. consumers. Lamb exports to the United States will be limited by the comparatively small number of lamb

consumers here and the competition from chilled domestic production. However, frozen lamb and yearling cuts should continue to sell well below prices of comparable fresh domestic production.

TABLE 13.--Chilled and frozen meat: Exports by country of destination, year ending June 30, 1955-59

Country of destination	1955	1956	1957	1958	1959 ¹
	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>
United Kingdom.....	346.5	374.1	354.6	316.5	416.9
United States.....	2.5	4.0	5.6	25.1	85.3
Malaya.....	16.6	16.8	18.6	17.9	14.1
Western Europe ²	16.1	20.4	9.2	8.3	4.2
Hong Kong.....	6.0	5.4	11.0	6.9	3.5
Japan.....	4.0	3.1	17.5	6.7	2.4
Philippine Republic.....	5.4	9.4	9.2	6.7	3.1
Canada.....	3.4	3.6	4.0	5.2	13.3
Other countries.....	34.5	39.0	26.1	26.0	20.7
Total.....	435.0	475.8	455.8	419.3	563.5

¹ July 1958-March 1959. ² France, Belgium, Netherlands, and West Germany.

Canned Meat. --The canned meat industry depends heavily on exports for a market, since only about one-eighth of the canned meat output is usually consumed domestically. Since World War II, the canned meat trade has grown tremendously; by 1954, exports were 10 times above the prewar average.

The needs of the war encouraged the canning of meat because in this form it was more easily preserved and shipped. Thus established, the canned-meat industry continued to expand after the war. The United Kingdom has been the main destination of Australian exports and in the last 5 years has taken over 80 percent of total shipments.

Trade with the United Kingdom has expanded significantly since 1951, when that country placed restrictions on imports from countries other than the Commonwealth, including Argentina, the principal competitor of Australia in this market. As a result, Australia secured the greatest share of the U. K. market and also became for some years the world's largest exporter. After these import restrictions were lifted in 1954, there was some decline in Australian sales to the United Kingdom as imports from Argentina increased. Australia, however, continued to have the advantage of duty-free entry

TABLE 14.--Canned meat: Exports by country of destination, year ending June 30, 1955-59

Country of destination	1955	1956	1957	1958	1959 ¹
	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>
United Kingdom.....	116.5	109.3	85.6	105.1	77.7
Canada.....	7.6	7.4	6.5	9.2	6.5
New Guinea.....	7.6	7.4	8.3	8.7	5.6
Philippine Republic.....	.2	.2	1.6	3.8	5.0
Other countries.....	5.6	7.0	7.5	6.5	7.0
Total.....	137.5	131.3	109.5	133.3	101.8

¹ July 1958-March 1959.

on all canned-meat exports, while beef imports from Argentina were charged 20 percent ad valorem. Also, over recent years, Australia has built up a substantial market in the United Kingdom for established brands. These factors will assist in maintaining a steady trade although probably at a lower volume than in 1951-55.

The only other important markets of any continuing importance in recent years have been the Australian territories and Canada, together responsible for about 12 percent of total exports. In Canada, there are prospects for developing a further small continuing market with the aid of a tariff preference of 30 percent ad valorem; however, domestic production in that country is of considerable importance and will limit imports. Prospects for a market in the United States are not favorable because Argentine brands are already well established.

TABLE 15.--Meat: Exports, averages 1937-55, annual 1954-59

Year ending June 30	Beef and veal	Mutton	Lamb	Pork	Variety meat	Canned meat	Total
	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>
Average:							
1937-40 ¹	273.5	38.3	171.1	37.4	21.5	13.9	555.7
1941-45.....	76.6	20.8	162.6	35.2	14.1	47.5	356.8
1946-50.....	175.6	37.9	90.3	21.1	24.6	87.1	436.6
1951-55.....	204.7	37.0	59.1	9.6	24.9	138.0	473.3
Annual:							
1954.....	291.0	54.2	45.9	5.8	26.9	140.9	564.7
1955.....	271.5	33.8	93.4	8.7	29.3	137.5	574.2
1956.....	323.0	36.1	82.7	3.6	31.4	131.3	608.1
1957.....	347.0	23.5	54.2	2.2	29.8	109.5	566.2
1958.....	277.3	45.7	65.4	2.7	28.9	133.3	553.3
1959 ²	375.6	58.5	88.5	2.4	39.0	101.8	665.8

¹ 4-year average. ² July 1958-March 1959.

Australian Meat Board.

Australia is also a large exporter of tallow, variety meats, and hides and skins. Normally, these products do not enter the United States, but compete with U. S. production in foreign markets.

TABLE 16.--Tallow and greases: Exports by country of destination, year ending June 30, 1955-58, and July 1958-March 1959

Country of destination	1955	1956	1957	1958	July 1958- March 1959 ¹
	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 pounds</i>
Japan.....	4,872	13,440	11,113	26,135	47,849
Union of South Africa.....	1,522	4,480	7,728	24,865	20,385
United Kingdom.....	10,504	34,534	24,996	14,025	19,853
Malaya.....	4,277	6,258	13,898	7,571	2,958
Rhodesia and Nyasaland.....	---	1,232	6,160	4,726	3,981
Thailand.....	---	784	4,480	3,102	4,674
Burma.....	6,947	17,181	16,294	2,087	22,914
Pakistan.....	2,425	1,212	4,834	1,480	4,556
India.....	7,639	6,925	5,264	---	2,361
Other countries.....	10,929	22,513	24,404	13,599	21,234
Total.....	49,115	108,559	119,171	97,590	150,765

¹ Preliminary.

TABLE 17.--Variety meats: Exports by country of destination, year ending June 30, 1955-59

Country of destination	1955	1956	1957	1958	1959 ¹
	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>
United Kingdom.....	21.7	25.8	25.1	24.4	34.3
Malaya.....	1.6	1.6	1.6	1.6	1.6
Italy.....	2.0	1.6	.9	.2	1.1
Philippine Republic.....	.2	.4	.4	.4	.2
Other countries.....	3.8	2.0	1.8	2.3	1.8
Total.....	29.3	31.4	29.8	28.9	39.0

¹ July 1958-March 1959.

Tallow. -- The United States, long the predominant supplier of tallow for the Japanese market, is facing increased competition from Australia. Although the Japanese like U. S. tallow and U. S. prices are competitive on the world market, exports to Japan are being restricted by dollar allocations instituted by the Japanese to protect their dollar reserves. Meanwhile, Australia has been able to increase its share of the Japanese tallow market. Under present trade agreements Japan is obligated to take about 22 million pounds of Australian tallow a year. Thus, exports of Australian tallow to Japan will continue even though U. S. prices are below Australian prices. Australian exports to Japan increased from 11 million pounds to 26 million in marketing years 1957 and 1958, and more than doubled in 1959. On the other hand U. S. shipments declined from 223 million pounds in the calendar year 1957 to 217 million in 1958.

Since the trade agreement between the Federation of Rhodesia and Nyasaland and Australia in 1955, our share of the tallow market there has fallen sharply and Australia's share has risen. U. S. exports to the Federation dropped from 4 million pounds in 1954 to 1.3 million in 1957 and were only 52,000 pounds in 1958.

Australia has also increased its exports of tallow to the Union of South Africa at the expense of the United States. In 1957 Australia shipped 8 million pounds to the Union while U. S. shipments amounted to nearly 41 million pounds. However, in 1958 Australia increased its shipments to 25 million and U. S. shipments dropped to 28 million.

TABLE 18.--Cattle and calf hides and skins: Exports by country of destination, year ending June 30, 1956-58

Country	1956	1957	1958
	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 pounds</i>
Italy.....	8,830	10,063	9,983
Japan.....	8,129	5,750	9,171
Germany, West.....	7,456	8,363	11,558
United Kingdom.....	7,149	5,894	5,767
Netherlands.....	5,675	190	5,717
Sweden.....	1,992	3,259	2,390
Finland.....	1,227	1,651	593
France.....	1,061	609	706
Norway.....	796	1,128	638
Panama.....	---	4,073	---
Philippines.....	---	1,094	636
Other countries.....	3,665	3,038	3,398
Total.....	45,980	45,112	50,557

TABLE 19.--Sheep and lamb skins: Exports by country of destination, year ending June 30, 1956-58

Country	1956	1957	1958
	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 pounds</i>
France.....	82,149	83,396	99,201
United Kingdom.....	13,338	13,097	12,406
United States.....	3,596	1,505	1,232
Italy.....	2,211	2,630	5,085
Sweden.....	2,187	1,158	846
Netherlands.....	1,370	470	1,555
Belgium-Luxembourg.....	862	1,421	2,245
Germany, West.....	413	152	466
Finland.....	127	403	498
Yugoslavia.....	30	183	1,184
Spain.....	---	---	517
Other countries.....	960	711	1,126
Total.....	107,243	105,126	126,361

Wool. -- The United Kingdom has been the principal market for Australian wool, generally taking almost one third of total exports. Japan was the second most important outlet during 1957 and 1958, followed by France, Italy, and Belgium. Sales to the United States have not been particularly large and have been declining since 1955. However, Australia is the largest source for U. S. imports of apparel wool, and receipts from that source during 1958 were equal to 38 percent of total U. S. wool imports. Producers in the United States are protected from the competition of Australian wool by tariff and subsidy payments.

Other Products. -- During the past year there has been a sharp increase in Australian exports of variety meats to the United Kingdom and Italy. U. S. exports to the United Kingdom have been limited to frozen beef tongues for the processing industry. Recently this trade has been completely liberalized for the dollar area. Italy has not permitted imports from the United States because of its dollar shortage.

Larger production of cattle hides has made it possible for Australia to increase shipments to Japan, West Germany, the United Kingdom, and Italy--all large markets for hides from the United States.

Australia is our second largest source of sheep, lamb, and goat casings and our sixth largest supplier of sheep and lamb skins. The United States is a net importer of these commodities.

TABLE 20.--Wool: Exports by country of destination, year ending June 30, 1954-58

Country	1954	1955	1956	1957	1958
	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>
United Kingdom.....	314	326	300	331	271
Japan.....	97	126	192	237	205
France.....	170	166	205	221	186
Italy.....	121	94	99	131	137
Belgium.....	94	95	97	110	105
West Germany.....	59	70	82	93	78
Poland.....	18	16	22	32	39
United States.....	72	76	65	51	35
Other countries.....	126	76	90	94	115
Total.....	1,071	1,045	1,152	1,300	1,171

MARKETING FACTORS AFFECTING EXPORTS

Livestock and Meat

Marketing and Processing. --Most livestock is sold at local or terminal markets by auction. The agent sorts the animals in salable lots, conducts the auction, and accounts for the proceeds. Also, there are a number of sales of livestock between ranchers, and slaughterers buy some livestock direct.

Principal livestock yards are located in or near large cities. Slaughter plants have holding pastures where animals are grazed until ready for slaughter. All livestock, except hogs, are normally sold on a per-head basis, while hogs are usually weighed and sold by the pound.

Most of the privately owned meat-packing plants also operate ranches and engage in both raising and fattening livestock. In this way, they are assured of a supply of slaughter animals without depending entirely upon outside purchases. Other plants engage in custom slaughtering and collect fees for dressing, cutting, and otherwise preparing meat. In Australia, custom slaughter is considerably more common than in the United States.

At some slaughter plants, a producer has an option of selling on the basis of dressed carcass weight and grade or by the head. Dressed weight is determined at the time the carcasses go into the coolers. Therefore, little additional accounting is required since all carcasses are weighed at that point.

In general, the meat-packing plants are modern and efficient. However, labor costs are high because of the degree of unionization, which has placed limits on the amount of work each man is required to do. Many of the meat-packing plants are closed part of the year; this makes it difficult to maintain an efficient labor force and also results in increased overhead costs.

Meat-packing plants are located near ports to facilitate loading on ships. A number of plants are being built and many old ones remodeled. There is also a considerable increase in plant facilities for boning meat.

The terminal markets are usually owned by municipalities which collect fees for services performed. Wholesale trade is conducted much as in the United States. Much of the sausage and other prepared meats are manufactured by wholesalers. Retail sales are handled mostly by specialized butcher shops. Marketing of precut, prepared consumer cuts of meat is not common in Australia.

The lack of improved transportation facilities for livestock and meat products creates some serious problems. The absence of surfaced highways in many areas makes it difficult to move animals or meat products by truck, and only a relatively small part of Australia's area is accessible to railroads. Livestock often have to be driven on foot long distances to railheads and then travel additional distances on unimproved railroad systems to the slaughter plants, mostly located near the coasts. Nearly every State has its particular railroad gage, so there is much unloading and reloading at border points.

Sometimes it is not possible to move livestock out of drought areas on foot in their weakened condition, and there is no alternative transportation. No national market for livestock and meat products exists in Australia as in the United States, where price spreads between cities tend to be the cost of moving livestock or meat between two cities. In Australia, one set of supply and demand factors probably determines values in the Sydney-Melbourne area, whereas prices at Perth would be determined by an altogether different set, and prices at Brisbane by still another. Often fluctuations in livestock and meat prices are large; there are likely to be more market gluts and shortages than in the United States.



Auctioning cattle, Melbourne. Buyers must estimate value on the "hooks."



Running sheep through a spray race to control flies on farm, New South Wales.



Typical Australian Merino sheep. Country has 150 million head of sheep--nearly 5 times U. S. total.



Preparing lamb cuts for export to the United States, at Bollorot, Victoria.



Boneless lamb shoulders for export to Canada are prepared at slaughter plant.

Inspection. --The Commonwealth Meat Inspection Service, Department of Primary Industries, is responsible for inspecting the slaughter facilities producing meat for export and the animals slaughtered. In addition to the slaughters, there are a number of bacon factories with killing facilities, which are listed in the Appendix. Export firms must maintain the sanitation of their plants or suffer revocation of license.

In addition to the Commonwealth inspection, most States have inspection systems for meat for local consumption. Also, a number of shires (counties) have laws governing inspection.

Grading. --Commonwealth inspection officials supervise the grading of meat for export, but the graders are actually employees of the slaughter plant. As the carcasses reach the end of the slaughter line, they are weighed and graded. The grader denotes the grade by affixing a tag to the carcass. This tag serves also as the official inspection certificate.

Australia has three basic classes of export beef: 1st-quality, 2d-quality, and 3d-quality or manufacturing. There is some production of baby beef and yearling beef, but these are not big export items. All carcasses grading yearling and baby beef are in the chiller grade of ox and heifer beef. Carcass classifications are based on sex and age, for example 1st-quality ox beef, 2d-quality cows, or 2d-quality ewe. Shipments of beef, lamb, and mutton to the United Kingdom must be stamped to denote the country of origin.

Labels on the stockinettes of chilled or frozen carcass meats and on cartons of boneless meat are printed in distinctive colors. Blue lettering denotes 1st quality, red lettering 2d quality, and black lettering 3d quality.

There is virtually no grain feeding of cattle in Australia; therefore, there are few steer or heifer beef carcasses produced which grade as high as U. S. choice. A few would grade good, but the bulk of the production would fall in the standard and commercial grades. Most of the steers and heifers marketed are much older than those in the United States.

Old cull cows from dairying and beef herds would normally grade utility, canner, or cutter. However, a number of fat cows marketed because they are shy breeders, or for some other reason, would grade commercial.

A number of heavy calves are being marketed for slaughter from both dairy and beef herds. These calves have either run with their mothers or have been fed liberal amounts of skim milk. Some of these would grade choice by our standards, but few would grade prime.

Australian grades and their approximate U. S. equivalents are as follows:

<u>Australian</u>	<u>United States</u>
Chiller-grade ox and heifer, maximum weight 700 pounds.	Steer or heifer carcasses grading from standard to low choice, but mostly good grade; up to about 4 years of age. "Wasty" fat carcasses are disqualified from this grade.
Yearling beef, maximum weight 700 pounds.	Carcasses from steers or heifers under about 2 years of age, ranging from standard to low choice.
Baby beef, maximum weight 700 pounds.	Well-finished carcasses from steers or heifers under about 3 years of age, ranging from good to low choice.

Australian

United States

1st-quality steers and heifers	Mostly standard to good steers and heifers. A few "over fat" steers and heifers not qualifying for the chiller grade fall in this category.
2d-quality steers and heifers	Utility and standard. Usually much older than in the United States.
3d-quality steers and heifers	Cutter and utility; a few canners.
1st-quality cows.....	Mostly commercial.
2d-quality cows	Utility to low commercial.
3d-quality cows	Canners and cutters.

Most of the U. S. contracts for boneless beef in Australia are written on the basis of 90 percent visible lean. The tenderloins are usually not included. Boneless beef from hindquarters may be packed separate from forequarters. Bull beef is packed separately.

The recognized weight classes and grades of lamb and mutton are:

- Wether or ewe mutton--1st, 2d, and 3d quality:
 - 48 pounds or less
 - 49 to 72 pounds
- Lamb--1st, 2d, and 3d quality:
 - Up to 36 pounds
 - 37 to 42 pounds
 - 43 to 50 pounds

Most lambs are relatively lean. A distinction is usually made between milk-fed lambs (suckers) and other lambs which have been weaned; lamb carcasses, however, are usually not differentiated in this way. Lamb for domestic sale is branded with a roller stamp so as to protect the purchaser. Yearling and mutton are not so marked. Some of the mutton from old wethers is rather fat, but shipments of boneless mutton to the United States are produced largely from old cull ewes and have little fat.

Australia does not have official grade standards for live animals. Market price reports make a distinction between steers and bullocks. At the Cannon Hill stockyards at Brisbane, animals up to 3 years are considered to be steers. Older animals are listed as bullocks. Generally accepted classes and grades are:

- Bullocks.....Prime light, prime medium, prime heavy, extra heavy, good trade.
- Steers.....Prime light, good.
- Heifers.....Prime.
- Yearlings.....Prime, trade.
- Calves.....Prime light, prime heavy, good trade, medium, boners.
- Cows.....Prime light, prime medium, prime heavy.
- Lambs--suckers Prime light, prime medium, prime heavy, good light, (young milk-fed) or good medium, good heavy, good trade. weaned.
- Wethers and ewesPrime light, prime medium, prime heavy, good light, good medium, good trade.
- Hogs.....Prime light porkers, prime heavy porkers, medium light porkers, prime light baconers, prime heavy baconers, back fatters.

Australian Meat Board. --The Australian Meat Board, composed of processors, exporters, and the Commonwealth Government, was organized in 1935 to exercise control over meat exports. Since World War II, it has been the dominating influence in the formulation of meat production and marketing policies.

The Board has taken an active part in the continuing negotiations of the 15-year meat agreement with the United Kingdom, which involved guaranteed prices to producers, the quantity and composition of the free quota, and the rate of deficiency payments. For other international agreements, such as GATT, the Board has entered into negotiations that concern meat.

The Board gives financial and other assistance to organizations active in further developing export trade in meat. In the interest of orderly marketing, the Board maintains a list of approved importers in various foreign countries including the United States, and Australian exporters are restricted in trading to consignees approved by the Board.

Funds are granted by the Board for extensive research on practically all phases of livestock production and marketing. Finances are obtained by an export tax on all kinds of meat.

The Meat Board handles deficiency payment funds, which are received periodically from the United Kingdom under terms of the 15-year agreement, and determines the rate of payments to Australian producers. Special subsidies, known as "bounty payments," have been paid on chilled beef and better grades of frozen carcass in order to encourage production.

Wool

Marketing, Inspection, and Grading. --More than 90 percent of the wool produced in Australia is sold at auctions. An average of more than 1 million bales (300 pounds each) is offered annually at Sydney, which has become the world's most important wool-selling center.

Wool auctions are held in all Australian State capitols and in a number of other cities. To facilitate selling, catalogs are divided into large lots and star lots. In the northern markets, large lots consist of five bales or more; in the southern, they are four bales or more. Smaller quantities are known as star lots, and those from several producers are often combined to form composite large lots. As many as 400 to 600 lots may be sold in an hour.

In general, wool is offered for sale in the order in which it is received at the warehouse. Sales are distributed throughout the selling season--late August through June--so that there are no gluts on the market at any one time. The National Council of Wool Selling Brokers sets up a tentative wool-selling schedule for each of the auction centers well in advance of the selling season. The amount of wool offered at each sale is determined by the preliminary estimate of the season's wool production and receipts into warehouse. As production conditions change, revisions are made in the quantities offered.

Wool is the only major export commodity sold under the free auction system and not controlled by a marketing board. Wool growers offer their wool through a broker at public auctions to the highest bidder. A reserve price may be placed on any lot by the seller, which gives him an opportunity of offering his wool again later.

The selling of wool at auction is greatly facilitated by the preparation of wool at the shearing shed on the farm. Before being sheared, the sheep are usually sorted according to age and sex. Wool from rams, ewes, yearlings, and lambs is kept separate. The shearer first clips the wool from the brisket, belly, britch, and the inside of the legs, which is graded separately. He then shears the main fleece in one piece. The fleece is folded and rolled but not tied as is the custom in the United States. The fleece roll is then graded on quality characteristics and baled with other fleeces of the same commercial

classification. The bale is labeled with the producer's name and district and the commercial class, given a serial number, and then shipped to a broker's warehouse at one of the auction centers, together with the classer's report of the type of wool. The buyer, who is familiar with the climatic and growing conditions in the area, has a good idea of the conditions of the clip before he inspects it in the broker's warehouse. Because of better market preparation, Australian wool generally commands a premium in the Boston market over U. S. wool of a corresponding grade.

The main function of the wool broker is to display and sell the wool grower's clip. Broker's charges, including commission, handling, and delivery charges, vary with different States and the quantity handled. Total charges for these services is about 2 cents a pound. The broker also provides classers to cull the flock and classify wool at shearing time, and may provide financing and other services to the growers. He may also deduct from the grower's returns any charges paid on the grower's behalf, such as those under the Wool Tax Act of 1952 (0.15 cents a pound), freight, and insurance.

Transportation charges from an Australian to a U. S. port amount to about 5 cents a pound, greasy basis.

Australian Wool Bureau. --The Australian Wool Bureau was established in 1953, replacing the Wool Board, which had been in existence since 1936. Unlike the Meat Board, the Wool Bureau does not directly control the marketing of wool, which is sold under the free auction system. The principal activity of the Bureau is to promote wool consumption. It also aids in research for increasing production of Australian wool.

The Bureau's members are the Commonwealth Wool Appraiser and six representatives of Australian wool growers. It is financed by funds collected under the Wool Tax Act of 1952. The Bureau also compiles detailed statistical data by type and quality of wool sold, and publishes reports on prices and exports.

EFFECT OF AUSTRALIAN EXPORTS ON U. S. PRODUCERS

Price Competition

Australia may continue to export frozen beef and mutton to the United States in large enough quantities to offer competition for U. S. producers. This would mainly affect U. S. beef prices, since the imported boneless mutton is more competitive with beef than with other meats. It would also compete most with prices of lower grade manufacturing beef in the United States, although there is a great deal of competition between manufacturing beef and beef of the higher grades. Exports of higher grade lamb and beef carcasses or cuts are not expected to be large enough to materially affect meat prices in the United States.

A reduction in U. S. beef prices from present levels will tend to reduce imports. As prices fall, U. S. tariffs become larger in relation to the value of meat in a foreign port. Freight and other marketing costs become a much larger proportion of the total landed value. However, prices of boneless beef and mutton could decline substantially until they reach a level where U. S. imports from Australia would cease entirely. Imports tend to even out U. S. meat supplies and prevent extreme price fluctuations, which are characteristic of the livestock industry. It has been argued that increased supplies of lamb, either from imports or from U. S. production, would benefit the industry by enhancing overall demand for lamb. The long-time trend in this demand in the United States appears to be downward. Lamb consumption per person now averages only 4 pounds per year, and lamb accounts for only 2.5 percent of the domestic meat supply. However, individual retail stores have increased the volume of lamb sales significantly by newspaper advertising, and it is apparent that effective promotion would increase demand. Nevertheless, in the last 20 years there has been a strong tendency for U. S. consumers to shift toward beef at the expense of either lamb or pork.

The United States producer will remain in a good position to compete with foreign countries for the consumer's meat dollar. U. S. production of beef is expected to rise for a number of years and there will be a fairly substantial increase in marketings of lower grade cow beef over the next 1 to 5 years.

Australia will not be in a position to export large amounts of chilled or frozen beef of the higher grades which U. S. consumers prefer for steaks and roasts. While use of frozen meat is growing, consumers still prefer fresh meat and are willing to pay a higher price for it in preference to frozen. Efficient production of low-cost pork and poultry will tend to reduce the need for imported beef. Domestic producers do not have to bear the large marketing costs that Australians have in making shipments to the United States. Marketing costs are ultimately paid by the agricultural producer, and the producer closest to market with the lowest freight rate has a comparative advantage.

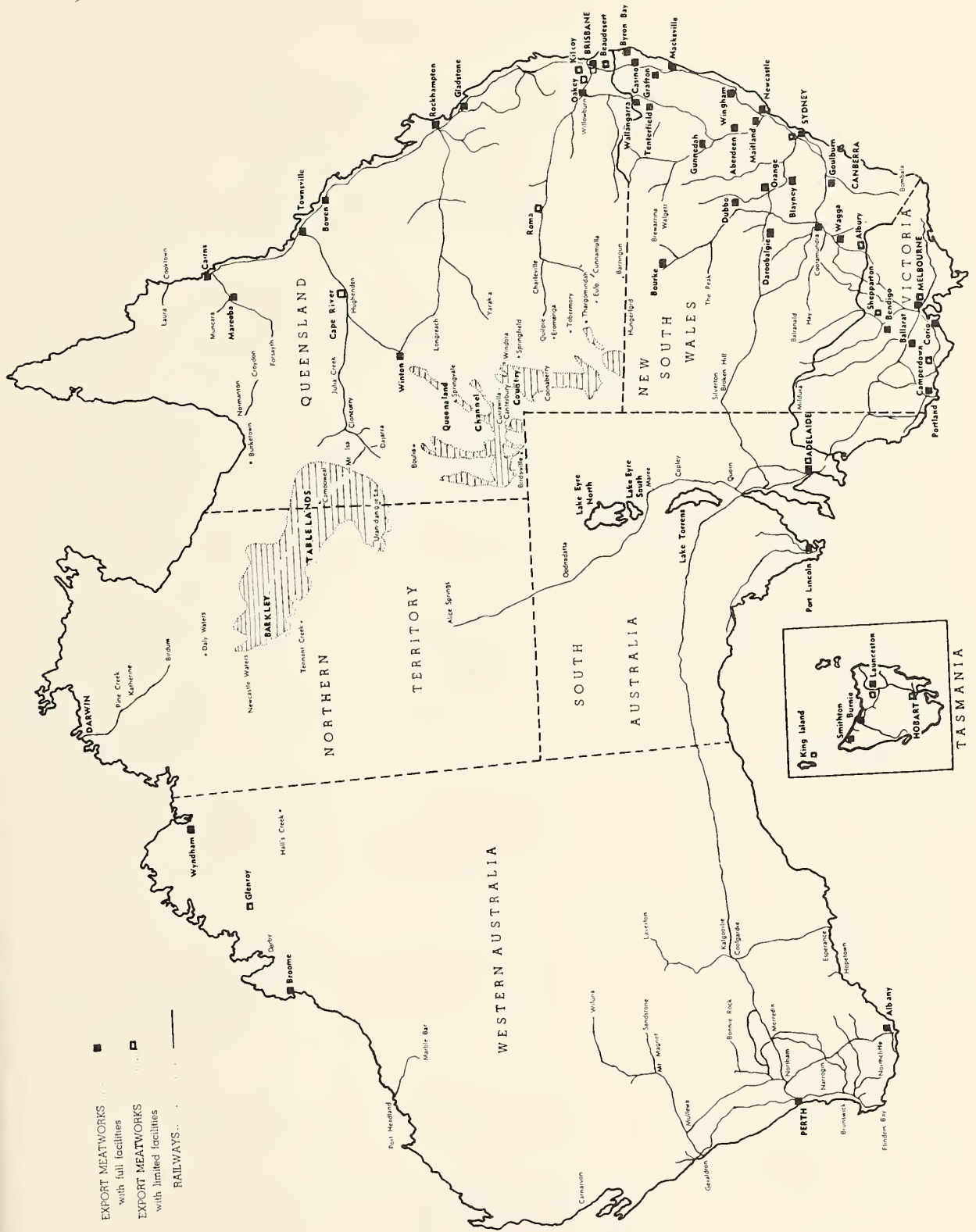
On a strictly price basis, the United States could export pork to Australia, but Australia prohibits pork imports to prevent introduction of livestock diseases and to stimulate domestic production. Australia has, however, imported substantial quantities of U. S. sausage casings, mostly hog, though it requires import licenses for shipments of this commodity from dollar areas.

U. S. wool producers are largely insulated from the effects of large imports of Australian apparel wool by the tariff and the domestic incentive payment program on wool. Were it not for the tariff, domestic wool prices would be nearer to the world level and competition from imports would increase.

The current domestic incentive program maintains average returns to U. S. growers (market prices plus government payment) at 62 cents per pound. During the past 10 years, domestic wool prices averaged 56 cents per pound while auction prices in Australia averaged 74 cents per pound. The tariff on apparel wool finer than 44's is 25.5 cents per clean pound, or about 15 cents per pound in-the-grease. It is often maintained that the domestic price is below the duty-added price of foreign wool, but this is primarily due to the better quality and uniformity of the latter.

Dollars earned from exports of meats and wool from Australia eventually return to the United States through mutually advantageous trade in other products.

Competition for U. S. Export Markets. --As Australia's livestock and meat production continues to grow, so does the competition for exports. The United States is a relatively small net importer of meat, but a large net exporter of lard, tallows, greases, hog and beef casings, variety meats, and cattle, calf, and kip skins. For some of these products--tallows and greases, variety meats, and cattle, calf, and kip skins--Australia is one of the largest U. S. competitors for export markets. Lard exports from Australia have not, however, assumed much prominence.



■ EXPORT MEATWORKS with full facilities
 ▨ EXPORT MEATWORKS with limited facilities
 — RAILWAYS

MEAT EXPORT PLANTS WITH CHILLING, FREEZING, AND STORAGE FACILITIES

Shown on map ■

<u>Location of plant</u>	<u>Proprietor or operator</u>
NEW SOUTH WALES:	
<u>Sydney area:</u>	
Homebush	Metropolitan Meat Industry Board
Riverstone	Riverstone Meat Co. Pty. Ltd.
<u>Other plants:</u>	
Byron Bay	A. W. Anderson Pty. Ltd.
Wallangarra.....	A. W. Anderson Pty. Ltd.
Casino.....	Northern Co-op. Meat Co. Ltd.
Tenterfield	Tancred Bros. Pty. Ltd.
Bourke	Tancred Bros. Pty. Ltd.
Grafton.....	Clarence River Co-op. Meat Soc. Ltd.
Macksville.....	The Mid-Coast Co-op. Meat Soc. Ltd.
Gunnedah	Gunnedah Municipal Council
Dubbo	Council of the Municipality of Dubbo
Wingham.....	Manning River Co-op. Bacon Soc. Ltd.
Aberdeen	Australian Chilling & Freezing Co. Ltd.
Maitland	City of Maitland Abattoir Dept.
Newcastle	Newcastle Abattoir Dept.
Orange	Rogers Meat Co. Pty. Ltd.
Daroolbalgie.....	Wm. Angliss & Co. (Aust.) Pty. Ltd.
Blayney.....	Blayney (Abattoir) County Council
Cootamundra	Conkey & Sons Ltd.
Goulburn.....	Goulburn City Council
Wagga	Wagga Wagga City Council
VICTORIA:	
<u>Melbourne area:</u>	
Footscray.....	Wm. Angliss & Co. (Aust.) Pty. Ltd.
Brooklyn	Thos. Borthwick & Sons (A/asia) Ltd.
Brooklyn	Norman Smorgon & Sons Pty. Ltd.
Newport	Sims Cooper Freezing Works Pty. Ltd.
Preston	J. C. Hutton Pty. Ltd.
<u>Other plants:</u>	
Bendigo.....	Victorian Inland Meat Authority
Ballarat	Victorian Inland Meat Authority
Corio.....	Jacksons' (Corio) Meat Packing Co. Pty. Ltd.
Portland	Thos. Borthwick & Sons (A/asia) Ltd.
QUEENSLAND:	
<u>Brisbane plants:</u>	
Moreton	Thos. Borthwick & Sons (A/asia) Ltd.
Cannon Hill	Queensland Meat Industry Board
<u>Townsville area:</u>	
Alligator Creek	Swift Australian Co. Pty. Ltd.
Ross River.....	Queensland Meat Export Co. Ltd.

Location of plant

Proprietor or operator

QUEENSLAND--Continued

Other plants:

Cairns	Cairns Meat Export Co. Pty. Ltd.
Mareeba.....	North Queensland Co-op. Ltd.
Bowen.....	Thos. Borthwick & Sons (A/asia) Ltd.
Winton	The Graziers' Inland Development Co. Ltd.
Rockhampton.....	The Central Queensland Meat Export Co. Pty. Ltd.
Gladstone.....	Swift Australian Co. Pty. Ltd.
Willowburn	Darling Downs Co-op. Bacon Assoc. Ltd.

SOUTH AUSTRALIA:

Adelaide area:

Gepps Cross	Metropolitan Export Abattoir Board
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Other plants:

Port Lincoln	Government Produce Department
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WESTERN AUSTRALIA:

Perth area:

Coogee	Anchorage Butchers Pty. Ltd.
Fremantle	Dept. of Agri., W. A. State Government
Midland Junction	Midland Junction Abattoir Board

Other plants:

Wyndham	Wundham Freezing, Canning, & Export Meat Works
Broome	Broome Freezing & Chilling Works Pty. Ltd.
Albany	Thos. Borthwick & Sons (A/asia) Ltd.

TASMANIA:

Smithton.....	Duck River Co-op. Butter Factory, Ltd.
Burnie	N. W. Co-op. Freezing & Canning Co. Ltd.
Launceston	J. C. Hutton Pty. Ltd.

MEAT EXPORT PLANTS WITHOUT STORAGE FACILITIES

Shown on map

<u>Location of plant</u>	<u>Proprietor or operator</u>
NEW SOUTH WALES:	
<u>Sydney area:</u>	
Auburn	Sydney Meat Preserving Co.
<u>Other plants:</u>	
Albury	Council of City of Albury
VICTORIA:	
<u>Melbourne area:</u>	
Braybrook	J. H. Ralph & Sons Pty. Ltd.
Braybrook	Western & Murray Co-op. Bacon & Meat Packing Co. Ltd.
Brooklyn	F. Watkins Pty. Ltd.
Flemington.....	Melbourne City Council
South Melbourne.....	Southern Meat Works Pty. Ltd.
Spotswood	R. J. Gilbertson Pty. Ltd.
<u>Other plants:</u>	
Camperdown	Borough of Camperdown
Shepparton	Shire of Shepparton
QUEENSLAND:	
<u>Brisbane area:</u>	
Dinmore	Bremer River Abattoir Pty. Ltd.
Dinmore	Dinmore Meat Works
Oxley.....	Foggett Jones Pty. Ltd.
Doboy	Darling Downs Co-op. Bacon Assn. Ltd.
<u>Other plants:</u>	
Cape River.....	John Kelly
Roma.....	Roma Abattoir Co-op. Assn. Ltd.
Kilcoy	Kilcoy Pastoral Co. Pty. Ltd.
Oakey	Oakey Abattoir Pty. Ltd.
Beaudesert.....	Tancred Bros. Pty. Ltd.
SOUTH AUSTRALIA:	
Adelaide	Noarlunga Meat Ltd.
WESTERN AUSTRALIA:	
Glenroy.....	Air Beef Pty. Ltd.
TASMANIA:	
King Island.....	King Island Abattoir Board
Launceston	Launceston City Council
Hobart	The Master Butchers Ltd.

BACON FACTORIES WITH KILLING¹ FACILITIES

Not shown on map

Location of plant

Proprietor or operator

NEW SOUTH WALES:

Byron Bay Norco Co-op. Ltd.
Lismore Foley Bros. Pty. Ltd.

VICTORIA:

Melbourne area:

Preston J. C. Hutton Pty. Ltd.
Preston Watson & Patterson Pty. Ltd.

Other plants:

Ballarat Ballarat Products Ltd.
Bendigo Foggitt Jones Pty. Ltd.
Dandenong Victorian Bacon Ltd.

QUEENSLAND:

Brisbane area:

Murrarrie Queensland Bacon Pty. Ltd.
Zillmere J. C. Hutton Pty. Ltd.

Other plants:

Maryborough Swift Australian Co. Pty. Ltd.
Warwick Warwick Bacon Co.

SOUTH AUSTRALIA:

Adelaide area:

Dry Creek Wm. Angliss & Co. (Aust.) Pty. Ltd.
Mount Barker W. Jacob Ltd.
Nairne Geo. Chapman
Woodside South Australian Farmers' Co-op. Assn. Ltd.

Other plants:

Yahl Thos. Borthwick & Sons (A/asia) Ltd.

WESTERN AUSTRALIA:

Perth area:

Bellevue Foggitt Jones Pty. Ltd.
Spearwood Watsons' Foods Pty. Ltd.

¹ Killing facilities for pigs, and in some cases for calves and canner cattle.

